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ABSTRACT

These documents (IGE booklet and accompanying mailing piece) provide information about the multiunit elementary school (MUS-E). The MUS-E is the organizational administrative component of a system of individually guided education (IGE) designed for the elementary school. The MUS-E and IGE are designed to formulate and carry out instructional programs for individual children in which planned variations are made in what each child learns, how rapidly he learns, and how he goes about learning. (Related documents are ED 051 589, ED 049 552-553 and EA 004 329.) (Photographs may reproduce poorly.) (Author)

Individually Guided Education

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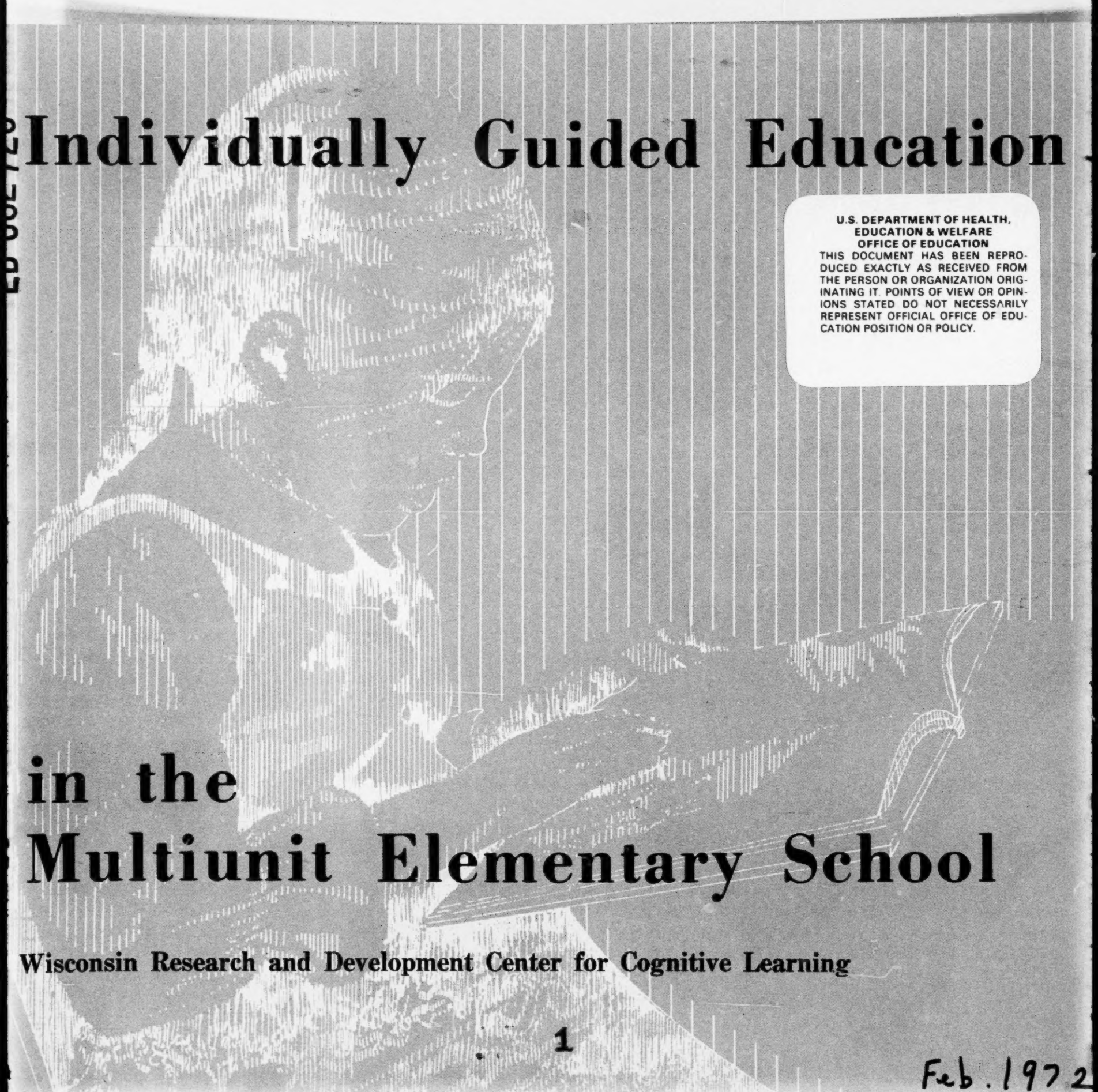

in the Multiunit Elementary School

Wisconsin Research and Development Center for Cognitive Learning

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Feb. 1972

Dear Colleague:

We are pleased to bring you information about the multiunit elementary school (MUS-E). The MUS-E is the organizational-administrative component of a system of individually guided education (IGE) designed for the elementary school. The system has been under development, evaluation, and refinement by the Wisconsin R & D Center for Cognitive Learning and cooperating educational agencies since 1965.

The Wisconsin Department of Public Instruction (DPI) began demonstrating and installing MUS-Es throughout the state in 1968. There were 99 MUS-Es in Wisconsin in 1970—71. According to Superintendent of Public Instruction William C. Kahl, the DPI chose the MUS-E because it showed the greatest promise for improving learning opportunities for children of the many programs studied.

In 1970 the MUS-E was selected for inclusion in a traveling exhibit prepared by Office of Education officials to acquaint educators with the most promising materials and procedures that had emerged from federally supported research and development efforts. In 1971 officials of the Department of Health, Education, and Welfare indicated their intention to support the spread of the MUS-E nationwide.

The MUS-E and IGE are designed to bring about far-reaching permanent improvements in elementary education. Major modifications of traditional educational organization, staffing patterns, administration, and instruction can be observed in MUS-Es. The National Evaluation Committee of the R & D Center described IGE and the MUS-E in their 1970 report:

"The Center's program of individually guided education in the multiunit schools may prove one of the most powerful and flexible sets of approaches yet devised for the continuing renewal of educational institutions and the facilitation of learning and teaching. It makes it possible to involve schools and other educational agencies in the problem-solving processes which are the essence of research and development. It promotes innovation, not as an end in itself, but as an answer to human needs."

In the next pages the story of IGE and the MUS-E is told in more detail. We invite you to learn more about this cooperative venture.

Yours sincerely,

Herbert J. Klausmeier

Herbert J. Klausmeier
Center Director

IGE: a comprehensive system

"Planned change, evolution in education without revolution – a careful analysis by people who understand the importance of learning and how it happens."

The above quote is what Norman Graper, principal of Wilson Elementary School in Janesville, Wisconsin, says about individually guided education (IGE) in the multiunit elementary school (MUS-E). Wilson school is in its fifth year of operation as an IGE-multiunit school. Principal Graper and his staff participated in developing the first MUS-E in 1965–66. Today, in 1970–71, there are 170 principals, 80 superintendents, and 2700 teachers implementing IGE in 170 of the nation's school.

Developed by the Wisconsin Research and Development Center for Cognitive Learning and cooperating educational institutions, IGE is a system for formulating and carrying out instructional programs for individual children in which planned variations are made in what each child learns, how rapidly he learns, and how he goes about learning. IGE designers believe that in order for higher achievement to be realized, each child's unique characteristics must be taken into account.

Center researchers find that elementary school practitioners want to improve educational practices. Indeed many continuously attempt to improve single components such as instructional materials, teaching methods, or in-service training. However, changing one area of the educational process does not necessarily yield educational improvement. IGE has emerged as a comprehensive system for educational improvement and includes seven components. When all components are properly integrated into a school, improvements in teacher morale, administrator-teacher communication, student achievement, and personal-social development are often dramatic. The components must function simultaneously as a system.

1. The multiunit elementary school (MUS-E) is the organization for instruction and related administrative arrangements at the building and central office levels. It provides for educational and instructional decision-making at appropriate levels, open communication, and accountability. The MUS-E has been developed, field tested, and refined in school settings since 1965. An inservice program including multimedia materials has been developed.

2. A model of instructional programing for the individual student has been designed to provide for differences in children's rates and styles of learning, level of motivation and other characteristics within the context of the school's educational objectives. This model is used by Center personnel in developing curriculum materials and by school staff in implementing IGE.

3. A design for developing measurement tools and evaluation procedures includes preassessment of children's readiness, assessment of progress and final achievement with criterion-referenced tests, feedback to the teacher and child, and evaluation of the IGE design and its components. School personnel use this model to develop their own instruments and procedures and Center staff use it to develop tests which accompany curriculum materials.

4. Curriculum materials, related statements of instructional objectives, and criterion-referenced tests which can be adopted or adapted by schools are needed. There is a shortage of these materials. The Center is developing materials and instructional procedures in reading, prereading, mathematics, environmental education, and motivation.

5. A program of home-school communications that reinforces the school's efforts by generating community interest and support is essential.

6. Facilitative environments in school buildings, school system offices, state education agencies, and teacher education institutions must be created. Inservice and campus-based educational programs prepare personnel for the new and changing roles implied by IGE. State networks involving the state education agency, local school systems, and teacher education institutions demonstrate, install, and maintain IGE schools. Local networks of school systems and support agencies generate ideas and secure consultant help. Statewide and local networks have been established in Wisconsin and Colorado.

7. Research and development is a continuing effort to generate knowledge and produce tested materials and procedures. The Center is engaged in development and development-based research to refine all the IGE components. In addition, each school must engage in practical research in order to design, implement, and evaluate instructional programs for individual students.

The Multiunit Organization

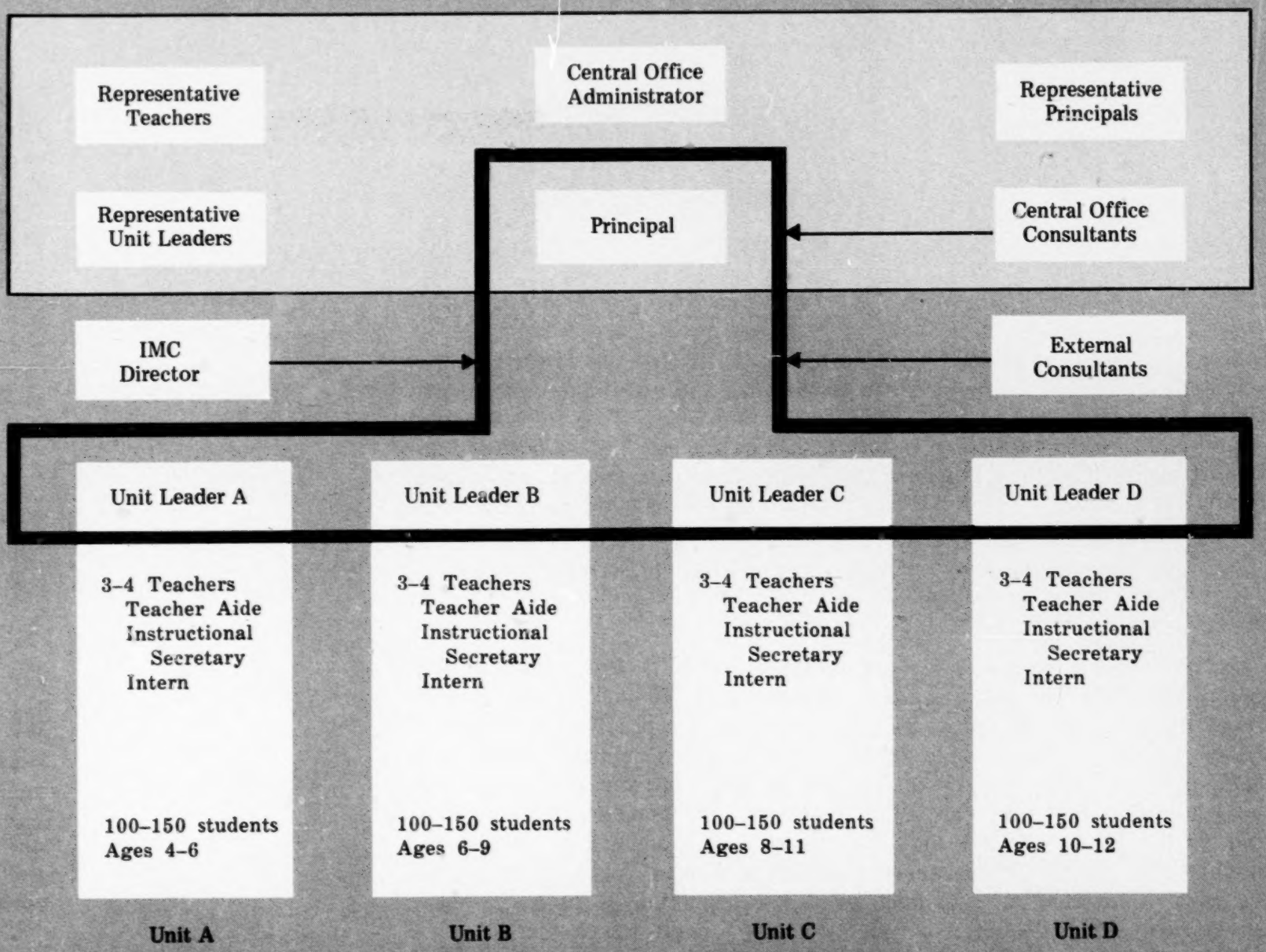
The multiunit elementary school (MUS-E) is designed to create an environment in which IGE practices can be installed and maintained. Differentiated staffing, group planning and decision-making, open communication, and accountability characterize a multiunit school. These characteristics are made possible by three organizational/administrative groups with overlapping membership. "The multiunit school's practical management tools make it really unique," asserts Principal Norman Graper.

The I & R Unit

The nongraded instructional and research (I & R) unit replaces the age-graded, self-contained classroom. Research is included in the title to reflect the fact that the staff must continuously do practical research in order to devise and evaluate an instructional program appropriate for each child. In the prototype of an MUS-E of 400–600 students shown in figure 1, each I & R unit has a unit leader or lead teacher, three or four staff teachers, one teacher aide, one instructional secretary, one intern, and 100–150 students. Children of a unit usually have a three-to four-year age span in contrast to traditional grades where children typically represent a two-year age span.

The main function of each unit is to plan, carry out, and evaluate each child's instructional program. Each unit engages in some inservice education. Some units plan and conduct research and development cooperatively with other agencies, and some are involved in preservice education.

Figure 1
Organizational Chart of a Multiunit School



The IIC

The instructional improvement committee (IIC) is at the second level of organization. It is building-wide in scope and is comprised of the principal and unit leaders.

The IIC takes primary initiative for stating the educational objectives and outlining the educational program for the entire school building. It interprets and implements system-wide and statewide policies, coordinates I & R unit activities, and arranges for the use of facilities, time, and material. The IIC deals primarily with developing and coordinating functions related to instruction.

The SPC

Substantial change is required to move from the self-contained classroom organization to the unit and the IIC. The system-wide policy committee (SPC) at the third organizational level can facilitate this transition. The SPC is chaired by the superintendent or his designee and includes consultants and other central office staff and representative principals, unit leaders, and teachers. The SPC takes initiative for identifying functions to be performed in each MUS-E of the district, recruiting personnel for each school and arranging for their inservice education, providing instructional materials, and disseminating relevant information within the district and community. A central office arrangement other than an SPC may be responsible for these functions; considerable flexibility is required since local school districts differ greatly in size.

The I & R unit, the IIC and the SPC provide for responsible participation in decision-making by all the staff of a school system. Each element, though being responsible for certain decisions, must secure information from one or both of the other elements. Personnel who serve at each of two levels provide one communication link (see figure 1).

Differentiated Roles

Some differentiated staffing programs create a complex hierarchy and call for a proliferation of new roles and titles. The multiunit school establishes only one new position, the unit leader or lead teacher. The roles of the building principal, staff teacher, teacher intern, teacher aide, and instructional secretary are altered somewhat. Other specialized roles are not precluded. Essential roles are outlined below.

Principal

As instructional leader, the principal is primarily responsible for initiating and refining the IGE system, managing the preservice and inservice teacher education activities, and administering the research and development program. It is not assumed, however, that the principal is the expert in any subject field, in research design, or in teacher education. In many areas the unit leaders and staff teachers are expected to have more knowledge than the principal, therefore decisions are made collectively through the IIC.

The principal is responsible, however, for organizing and chairing the IIC and for assuring implementation of its decisions. In addition, he supervises and evaluates staff and makes sure the building has adequate resources.

How do principals react to sharing decision-making power with staff? One principal gave us a typical reaction. "I've been scared a few times," he admitted. "Often my teachers have better ideas than I do. But I feel security, too. I don't go out on a limb alone—maybe get it sawed off—for every decision I make. My staff and I crawl out there together."

Unit Leader

The unit leader has responsibilities as a member of the IIC, as a leader of a unit, and as a teaching member of a unit. The unit leader is not a supervisor but a career teacher who plans and coordinates unit activities. He is responsible for demonstrating new materials and for keeping abreast of research and development. As a member of the IIC, he helps plan and develop the instructional program of the building and serves as a liaison between the unit staff and the principal and central office staff.

As unit coordinator, the leader is responsible to the principal for planning and implementing the unit's educational program. However, each teacher in the unit shares fully in decision-making and takes initiative regarding the

program of specific children. Unit meetings are held at least one hour a week (during school time), giving teachers an opportunity to pool their knowledge and expertise. They cooperatively plan, carry out, and evaluate an instructional program for each child. "You share ideas," says a unit leader and 26-year teaching veteran. "It's encouraging to have someone to talk to and rewarding to help newer teachers find their way."

Staff Teacher

A staff teacher plans the program for and guides many children in cooperation with other unit members. In contrast, a teacher in a self-contained classroom works independently with a small number of children. A higher level of professionalism is required by the staff teacher in implementing an IGE instructional system. Staff teachers cooperatively formulate objectives for each child, assess each child's progress, and use new materials, equipment, and instructional procedures.

For some, teaching in the unit may threaten loss of autonomy. But as one unit teacher put it, "Freedom of choice actually increases as you grow professionally through the exchange of ideas." In the environment of the MUS-E, teachers realize that joint planning and evaluating are vital to a more complete understanding of the teaching-learning process and to an effective IGE program.

Intern

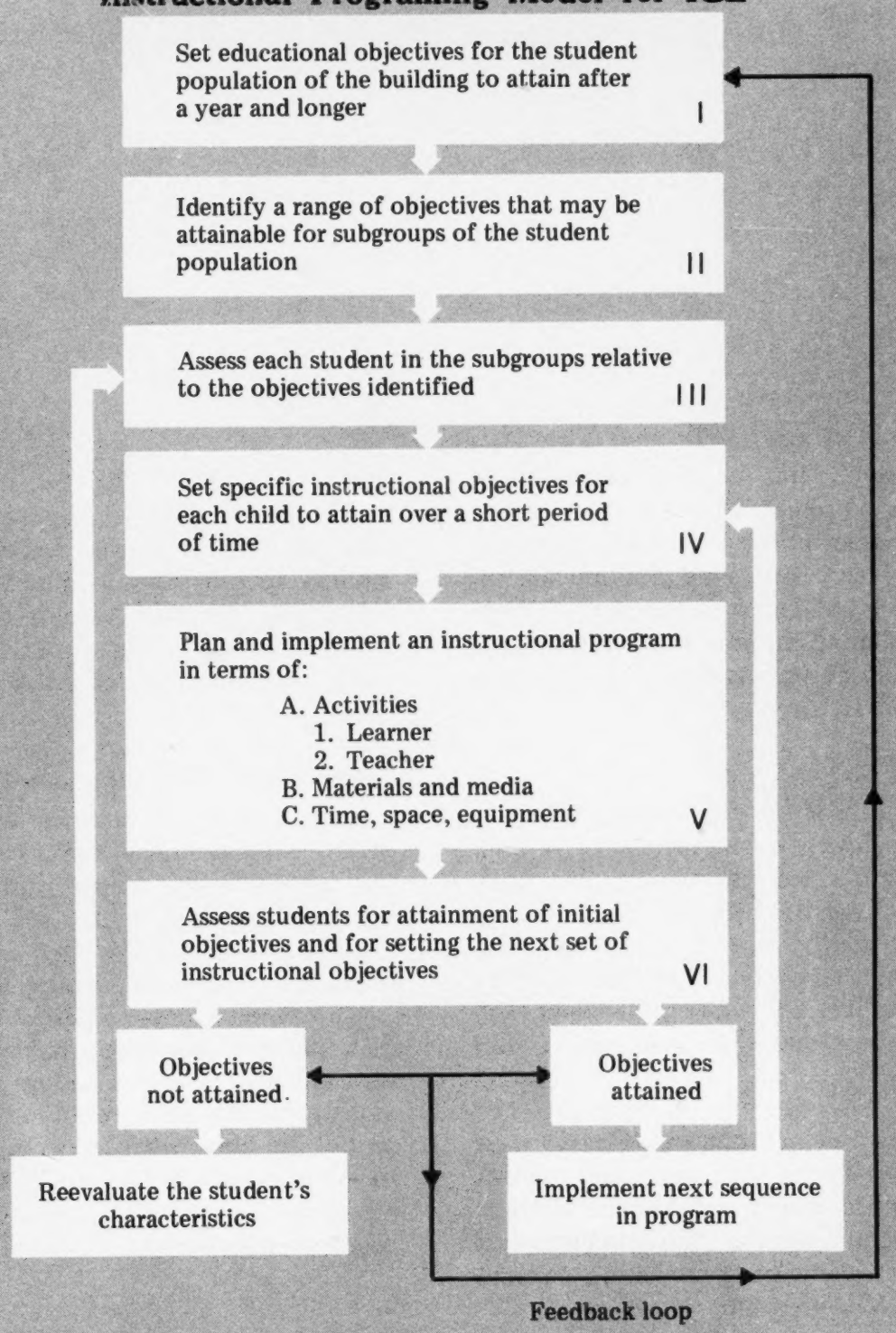
The intern engages in professional activities, not in routine or clerical duties. At first he observes but moves rapidly to full responsibility at a level similar to that of a beginning certified teacher. While the unit leader and teachers retain decision-making responsibility, the intern does implement decisions and participates in unit meetings.

Instructional Secretary and Teacher Aide

Instructional secretaries and teacher aides are non-certified members of units. The wise use of their abilities is the responsibility of the unit leader in cooperation with the principal and unit staff. The instructional secretary performs clerical tasks such as keeping attendance records, duplicating materials, typing, and filing.

The precise responsibilities of teacher aides vary greatly, depending on the aide's background and training. For example, the aide with a college degree in a subject field such as science will perform functions different from the high school graduate with no work in science after ninth grade. In general with regard to IGE, teachers have found aides especially helpful with one-to-one, small group, and independent activities.

Figure 2
Instructional Programing Model for IGE


Set educational objectives for the student population of the building to attain after a year and longer I
Identify a range of objectives that may be attainable for subgroups of the student population II
Assess each student in the subgroups relative to the objectives identified III
Set specific instructional objectives for each child to attain over a short period of time IV
Plan and implement an instructional program in terms of:
A. Activities
1. Learner
2. Teacher
B. Materials and media
C. Time, space, equipment V
Assess students for attainment of initial objectives and for setting the next set of instructional objectives VI
Objectives not attained
Objectives attained
Reevaluate the student's characteristics
Implement next sequence in program
Feedback loop

Instructional Programing

IGE's main purpose is to help teachers design instructional programs for individual children. Ideally, each child's program will be based on how and at what pace he learns best and where he stands on mastering specific skills or concepts. Trying for this ideal involves a series of steps outlined in figure 2.

The R & D Center is developing new curriculum materials with IGE principles built into them. The Wisconsin Design for Reading Skill Development (WDRSD), an individually guided reading program, is furthest along in development. For purposes of illustration, the following explanation of the instructional programing model (figure 2) discusses the six steps as they work in schools using the word attack, or word recognition, element of the WDRSD.

Step I involves setting school-wide educational objectives in reading by the IIC. A terminal objective for reading might be: 90 percent of the children attain independence in word attack by age ten, 95 percent by age 11, and 99 percent by age 12.

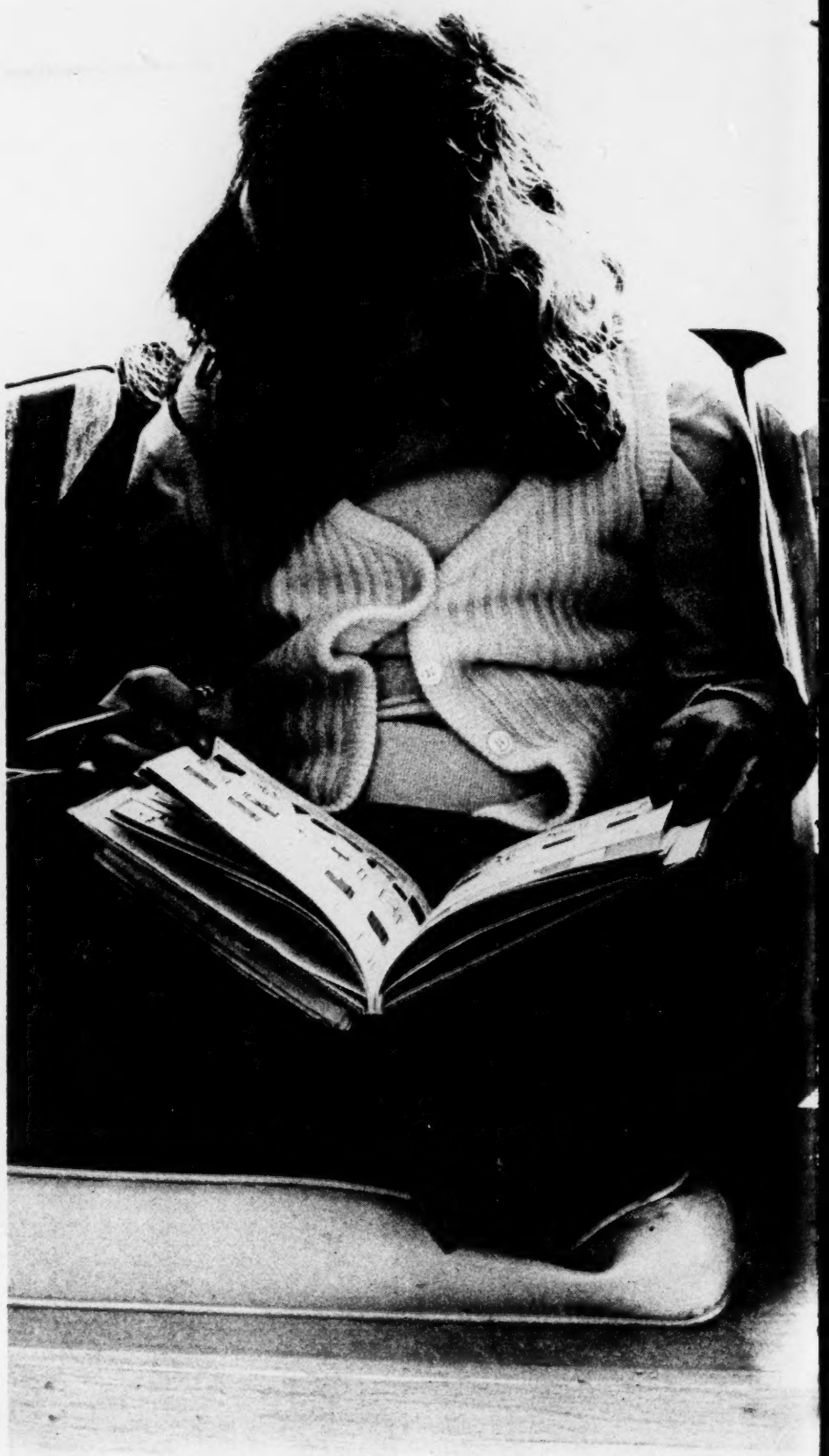
Step II calls for identification of a subset of specific instructional objectives by the I & R unit staff that are appropriate for a group of children. Only part of the 45 word attack objectives, for example, are suitable for children in the early stage of reading.

Step III involves the actual assessment of each child's level of skill development. For each behaviorally stated objective of the word attack element, a short criterion-referenced test has been developed and validated for use in assessing mastery or nonmastery of the skill described. There are four levels of tests (A, B, C, and D) available. A teacher working with a unit of six- and seven-year-olds would probably start by assessing all children at level B and then test up or down a level with children for whom level B tests were too easy or too hard. This testing, supplemented with observation, indicates which of the skills each child has already mastered and which he has not.

Step IV involves setting instructional objectives for each child in the unit. Using the WDRSD, behavioral objectives related to the skills a child has not mastered become his instructional objectives.

Step V calls for the unit teachers to plan an instructional program for all unit children. Each teacher in turn assumes responsibility for the instruction of certain children, who are grouped together because they need to master one or two of the same skills. While children will be involved in several different instructional patterns in the various curriculum areas, each will have some instruction in small groups with other children working on the same skills. The word attack element of WDRSD has a Teacher's Resource File which keys published materials and suggested activities to each of the 45 skills.

Step VI of the model involves assessing students to determine their attainment of objectives. Once the student reaches the mastery level (usually an 80 percent criterion is set) on a group test, he moves on to the next sequence of the program. If he does not master the skills after additional work, the unit staff takes another look at his progress and raises questions such as — was he ready for the skills tried, were the skills appropriate to his abilities, was the instructional program appropriate for his needs? — and designs another program for the same or another objective.



Assessment & Evaluation

Assessment for pupils both prior to and following instruction is called for by the Instructional Programing Model. In both cases, pupils take criterion-referenced tests which measure their attainment of the behavioral objectives around which instruction is organized. The assessment data are used not only to plan the course of a child's instruction, but also to evaluate whether the school is meeting the objectives of its educational program. This dual use of data is at the heart of the Model for Assessment and Evaluation.

The Instructional Programing Model assumes that educational objectives have been adopted by the building staff. By summarizing individual assessment data one can determine how well groups of children of similar characteristics are performing, and thereby learn whether the staff's objectives are attained. Results of such an analysis yield information necessary to the superintendent and the public to whom the staff is accountable. Judgments about the effectiveness of a school's program can then be based directly upon performance related to specified objectives.

The Wisconsin Design for Reading Skill Development combines the wisdom of generations of teachers and reading consultants with recent research findings. It is organized into six skill areas: word attack, study skills, comprehension, self-directed reading, interpretive skills, and creative skills. The Design describes essential reading skills and related behaviors and provides machine-scorable criterion-referenced tests for assessing children's mastery of these skills from kindergarten forward. Resource materials and management procedures for teachers help them organize programs for individual children.

In 1970-71 the word attack element was tested with primary children in schools in Alabama, Colorado, Florida, Georgia, and Wisconsin.

In 18 Wisconsin and 5 Colorado schools for which data have been analyzed, the field test group performed better on more than 90 percent of the word attack objectives after six months instruction than children of the same age in the same school had performed a year earlier without the word attack program. End-of-the-year testing showed excellent retention of skills mastered. Performance on the Cooperative Primary and Stanford Achievement tests by children who had word attack instruction was as good as or better than the performance of children who had not. Many participants made dramatic gains in phonic analysis over nonparticipants the year before.

In 1971-72 the word attack materials are under field test in more than 400 schools in 29 states. Schools interested in field testing the word attack and study skills programs during 1972-73 may apply to Quality Verification Section, Wisconsin R & D Center, 1404 Regent Street, Madison, Wisconsin 53706.

The Prereading Skills Program attempts to prevent reading failures by identifying and overcoming deficits in prereading skills at the preschool and kindergarten levels. Diagnostic tests have been developed for three visual skills (letter order, letter orientation, and word detail) and two auditory skills (sound matching and sound blending). Extensive research shows that these skills relate directly to learning to read and correlate with reading success.

Instructional packages to help children learn the skills include games, songs, and other activities. Informal assessment procedures and a handbook for teachers are also included.

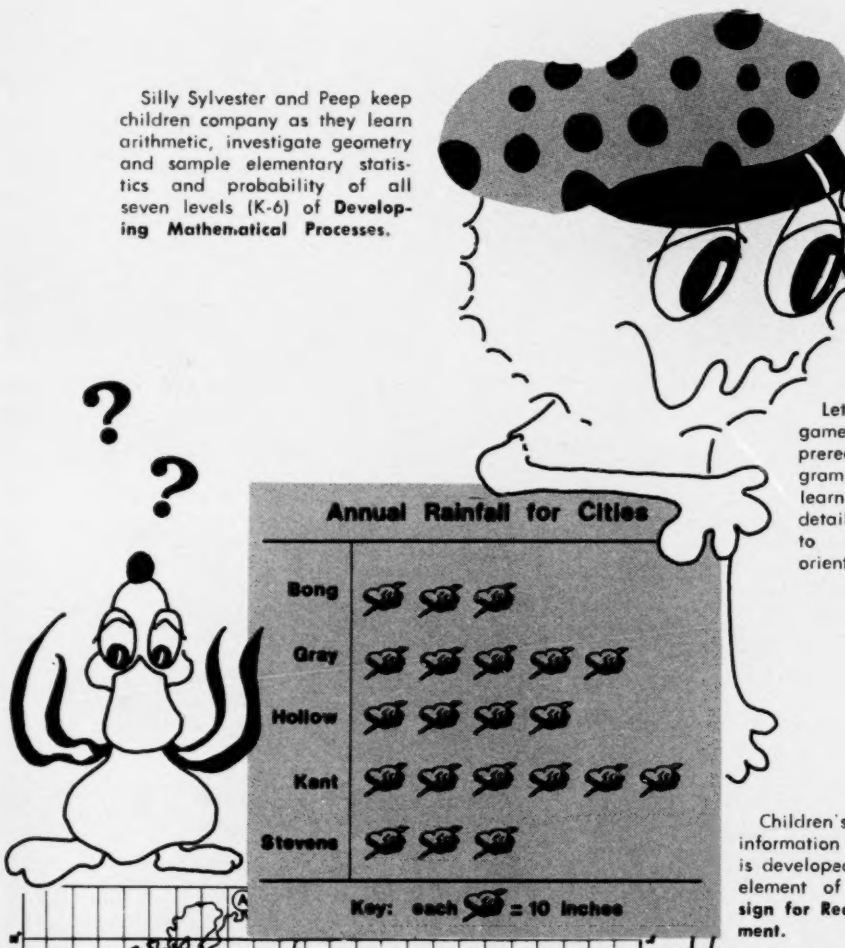
In 1971 pilot tests in 3 kindergartens showed that the program is workable for teachers and successful with children. The proportion of kindergartners acquiring mastery of each skill was considerably higher in the pilot group than in the control group. In 1971-72 the program is undergoing small-scale field testing in a variety of kindergarten settings. Schools wishing to participate in field testing this program in 1973-74 may apply to Quality Verification Section, Wisconsin R & D Center, 1404 Regent Street, Madison, Wisconsin 53706.

How Children See IGE

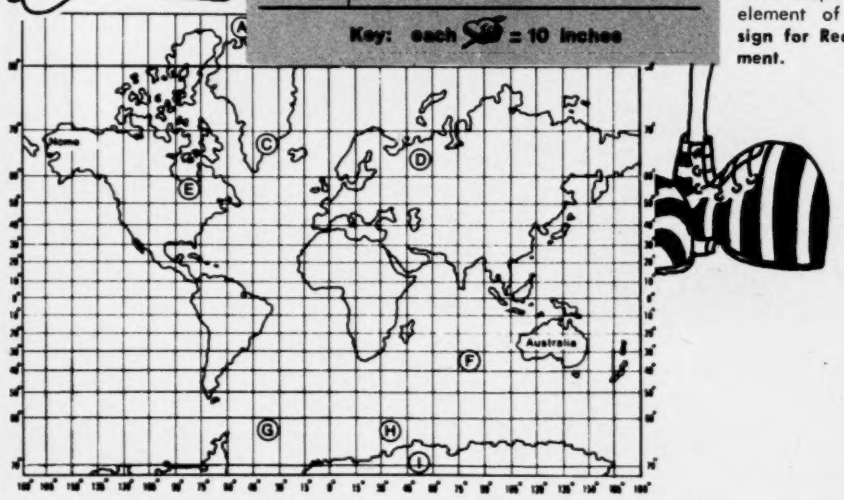
Once a Center curriculum program is under development—content identified and organized to facilitate learning, and assessment exercises validated—materials are designed with an eye for what children will find interesting, appealing and supportive of learning. Materials shown here are in various stages of evaluation with thousands of children and their teachers.

Curriculum Materials

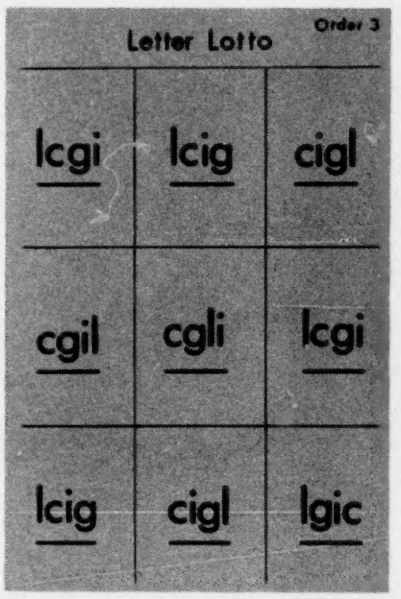
Silly Sylvester and Peep keep children company as they learn arithmetic, investigate geometry and sample elementary statistics and probability of all seven levels (K-6) of **Developing Mathematical Processes.**



Children's ability to derive information from picture graphs is developed by the study skills element of the **Wisconsin Design for Reading Skill Development.**



This projection map assesses children's skill in locating places by using the system of latitude and longitude. The skill is one of 132 identified in the study skills element of the **Wisconsin Design for Reading Skill Development.**



Letter lotto is one of several games children play in the prereading instructional program. As they play, they learn to pay attention to two details important in learning to read—letter order and orientation.

The relationship between snakes and other marsh creatures and plants is considered in the first illustrated ecological reader under production for the Center science program. The story—told from the point of view of two children—follows a community through deciding between saving a marsh and building a highway.

The pre-reading program's sound sorting cards—this one represents **sh**—are used to give children practice in determining which of two given sounds is present in a word.

eveloping Mathematical Processes (DMP) integrates arithmetic eometry, and probability and statistics as well as combining n activity approach to learning with IGE practices. Based on n empirical analysis of how children learn mathematics, DMP epresents the first attempt to incorporate an activity approach a carefully sequenced complete program of mathematics struction for grades K-6. Early pilot studies show that children njoy the activity approach and learn well. Teachers do not equire lengthy inservice education to use the program.

The major innovation in content is investigating geometry at ll levels of instruction. Integrating geometry with the study f arithmetic is done by taking a measurement approach where ildren themselves generate the numbers they work with. Beause they are constantly generating numerical data, children lso study elementary probability and statistics as they oranize and analyze this data.

The complete program will include 12 curriculum packages, ach containing a teacher's guide, criterion-referenced tests, nd a variety of manipulative and printed materials for chilren. In 1970-71, the kindergarten-primary program was deeloped and partially pilot tested. It is projected for largecale field testing in 1972-73, with the program for grades -6 to follow in 1973-74. Schools interested in testing the indergarten-primary program in 1972 may apply to the Quality Verification Section, Wisconsin R & D Center, 1404 egent Street, Madison, Wisconsin 53706.

Individually Guided Motivation is an inservice program to increase children's interest in learning and their self-direction. The multimedia inservice materials describe and illustrate how principles of goal-setting, modeling, feedback, reinforcement, and reasoning may be incorporated into the instructional program.

There are four motivation-instructional procedures described in sound-motion pictures: setting goals with individual children; promoting independent reading; tutoring of younger students by older students; and small group conferences to encourage self-directed behavior.

In 1970-71 the 10 teachers who conducted the small-scale field test of the goal-setting procedures found them to be effective in increasing children's rates of skill development in reading and mathematics.

The 65 adults who held conferences to promote the independent reading of 360 children reported substantial gains in the number of books the children read. Grade equivalent gains of approximately one year or more in reading speed, word recognition, and comprehension were typical for children in grades 2 and 3 during the semester the conferences were held.

Schools wanting to participate in field testing the program in 1972-73 should apply to Quality Verification Section, Wisconsin R & D Center for Cognitive Learning, 1404 Regent Street, Madison, Wisconsin 53706.

Elementary Science: *Man and the Environment* makes children aware of the complex relations between science and society, between man and his environment. The program is designed to teach children concepts of environmental management and related decision-making processes. Because of the urgent need for curriculum materials of this kind, readers and related materials are being developed to supplement the content of various curriculum areas.

The first two books currently under development are for children in the intermediate grade range. Each instructional package will focus on a particular problem such as air pollution and will contain an illustrated reader, an activities booklet, and audiovisual materials. Assessment exercises, a teacher's edition, and supporting inservice materials are also projected.

IGE: Cost and Requirements

It is difficult to determine the cost of becoming a multiunit school. The Center recommends that a school should have adequate funds to make necessary changes. The unit leader should be paid at least 5 and up to 20 percent above the regular schedule in compensation for increased responsibility, and to make the position of lead teacher a highly attractive career position. The school should provide one aide and one secretary per 150 children unless there are already seven or more adults to work with each unit as noted in figure 1. The school must supply additional instructional materials if it is not already equipped to provide for differences in rates and styles of learning.

The staff of the school must be able to participate, primarily at local expense, in a first-year staff development program as follows: (a) a one-day conference for the chief school officer, (b) three days of inservice training for building principals and unit leaders, (c) a one-week workshop for reading consultants, and (d) one week of inservice for the entire building staff just before the opening of school, followed by four half-days during the first year.

Recently constructed open-space buildings usually require no remodeling. Older buildings, however, often require some additions, use of portable space, or remodeling (such as eliminating walls).

Each MUS-E of 500–800 enrollment needs two well-supplied instructional resource centers: one for older children that will accommodate 90–120 children simultaneously, and one for younger children that will accommodate 60–75 children.

Principal Norman Graper reports that hiring more aides and buying additional instructional equipment and materials for IGE has added to Wilson School's operating costs. But the increase is offset by savings. The school does not, for example, use many substitute teachers since other members of the unit can fill in for an absent teacher. Also, the IGE learning environment has substantially cut both retentions and vandalism.

NEC

The National Evaluation Committee of the R & D Center which has met annually with the staff of the Center since 1965 expressed these ideas about the MUS-E in its 1970 report concerning the Center:

The Committee wishes to reiterate its strong support of the multiunit school and individually guided instruction and will here note the salient features provided by this unusual combination of educational and organizational concepts:

1. Attention is focused on the individual learner as a person with unique characteristics, concerns, and motivations.
2. Teachers and other educational personnel are helped to employ systematic problem-solving processes to the identification and satisfaction of the educational needs of individuals—both in the student body and on the staff.
3. The basic organizational units are small enough to allow every person to be known and treated as an individual and large enough to permit role differentiation and complementarity of contributions.
4. Provisions for staff training and continuing development are an essential part of the approach.
5. There is a good reconciliation of the values of autonomy and accountability, small group responsibility and intergroup coordination.

The Committee's assertions are based on facts gathered in multiunit schools over the past four years.

Impact of the Multiunit Organization

Implementing IGE in the MUS-E calls for cooperative working relationships, shared decision-making, instructional programing, and specialization of work by the instructional staff. Roland J. Pellegrin of the Center for Advanced Study of Educational Administration at the University of Oregon conducted research in three MUS-Es and three control schools in three Wisconsin school systems. These multiunit schools were completing their initial year under the new pattern. The main conclusions of Pellegrin concerning changes that occurred during the first year of adopting the MUS-E pattern follow.

1. There was a superior recognition among MUS-E teachers of the vital role planning plays in instruction. The five most important tasks of MUS-E teachers dealt with specific types of planning and the preparation of instructional materials.
2. New specialization of labor emerged in the multiunit schools. Some teachers devoted most of their time to individual pupils, others worked mainly with small or class-sized groups, while a few worked with large groups.
3. Unit leaders were the focal points of interaction in the units and served as links between the teachers and the principal.
4. In the control schools, decision-making affecting each classroom was generally the prerogative of individual teachers, who served as primary decision-makers, and the principal, who provided advice or set limits. In the three MUS-Es decisions were typically made by the unit staff in cooperation with the principal.
5. Job satisfaction and teacher morale were much higher in the MUS-E staff.

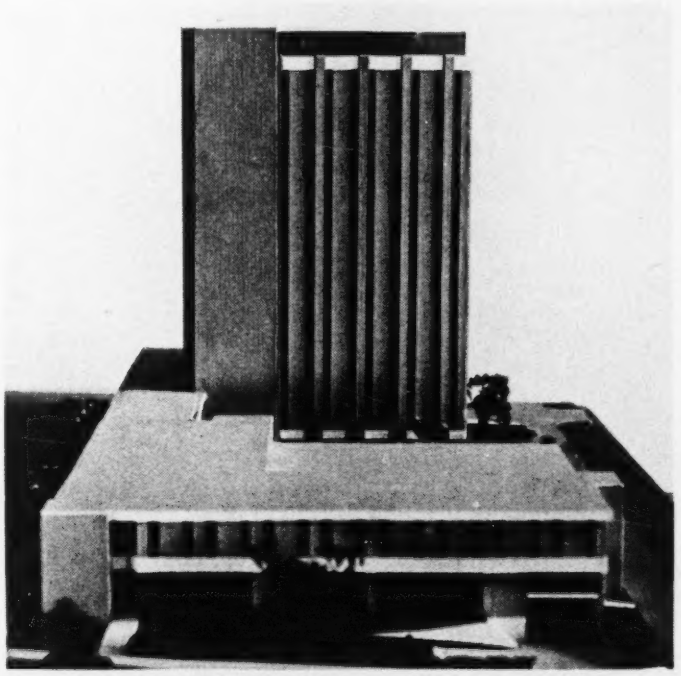
Effectiveness of Instructional Programing

Ideally, instructional programing for the individual student should be implemented in at least one curriculum area by the end of a MUS-E's first year of operation. As of 1970–71, some children were in their fourth year in an MUS-E; however, the first supportive IGE curriculum area, reading, was not introduced until the students were in their third year.

In the 1969–70 school year the word attack element of the Wisconsin Design for Reading Skill Development (WDRSD) was used at the primary level in two smoothly functioning MUS-Es in their third year of operation. The word attack program includes 45 skills, and is designed for the first four years of schooling, including kindergarten. Group tests were administered in September of each year to identify skills the students had not mastered as well as those they had mastered; it was not anticipated that the majority of students would have mastered all the skills. Both years the tests were given to children in the second through fourth years of schooling (equivalent to grades 1–3). Therefore it is possible to compare the percentage of children at these grade levels who had mastered the various skills before the reading program was introduced with the percentages of those who had mastered the skills after experiencing the program for one year. Both schools made a special attempt to carry out excellent instruction in reading before the WDRSD was introduced. The tests showed that a higher percentage of the experienced children achieved mastery of 23 skills, fewer mastered 6 skills, and an equal percentage mastered one skill. In general, mastery by the 1970 groups was substantially higher than by the 1969 groups except in the second year of schooling, equivalent to the first grade in a traditional school. The relatively lower mastery here is attributable to the fact that the new reading program was not introduced for most children until late in the first (kindergarten) year and then only to those manifesting positive behaviors indicative of reading readiness.

The Doren Diagnostic Reading Test measures achievements similar to those implied by the objectives of the WDRSD. Two schools administered this test to third year (second grade) children who had not participated in the WDRSD in May of 1969 and to those who had participated for one year in May of 1970. The performance was higher for those children who had the program in 1969–70 than those who had not in 1968–69. The mean difference was statistically significant; higher achievements equivalent to one to four months were additionally observed on standardized reading tests at all primary school levels.

The preceding results based on criterion-referenced and standardized tests indicate the desirable combined effects of the multiunit organization and a concerted attack on curriculum improvement along the IGE model. This is not to be interpreted to mean that the organization alone will produce higher student achievement or that higher achievement will accrue in the absence of a coordinated, well-planned curriculum improvement effort. Changes in organization, instructional programing, assessment, curriculum and other elements are all necessary to produce comprehensive educational improvement.



The Wisconsin Research and Development Center for Cognitive Learning is in its seventh year of generating and applying new knowledge about learning to instructional approaches and materials which are tested and refined in school settings. Nearly half a million children and 19,000 teachers and administrators in 32 states are currently using products developed by the Center.

The Center was established in 1964 with a $1 million grant from the United States Office of Education (OE) to involve University of Wisconsin scholars and subject matter specialists in a comprehensive effort to improve educational practice.

Funding was recently boosted to $1.8 million per year and the Center is preparing to move into a new building in 1972. The new research facility will house the Center and several other educational programs on the Wisconsin campus.

Donald J. McCarty, Dean of the UW School of Education, commented on the significance of the increased funding. "This increase in program funding, along with a 1969 OE grant of $4.2 million for a research building on the Madison campus, demonstrates the commitment of the federal government to improving education through research and development," he pointed out.

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(Center No. C-03, Contract OE 5-10-154).

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Individually Guided Education

Multiunit Elementary School

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Guided Education

Multiunit Elementary School

Wisconsin Research and Development
Center for Cognitive Learning

The University of Wisconsin
1404 Regent Street
Madison, Wisconsin 53706

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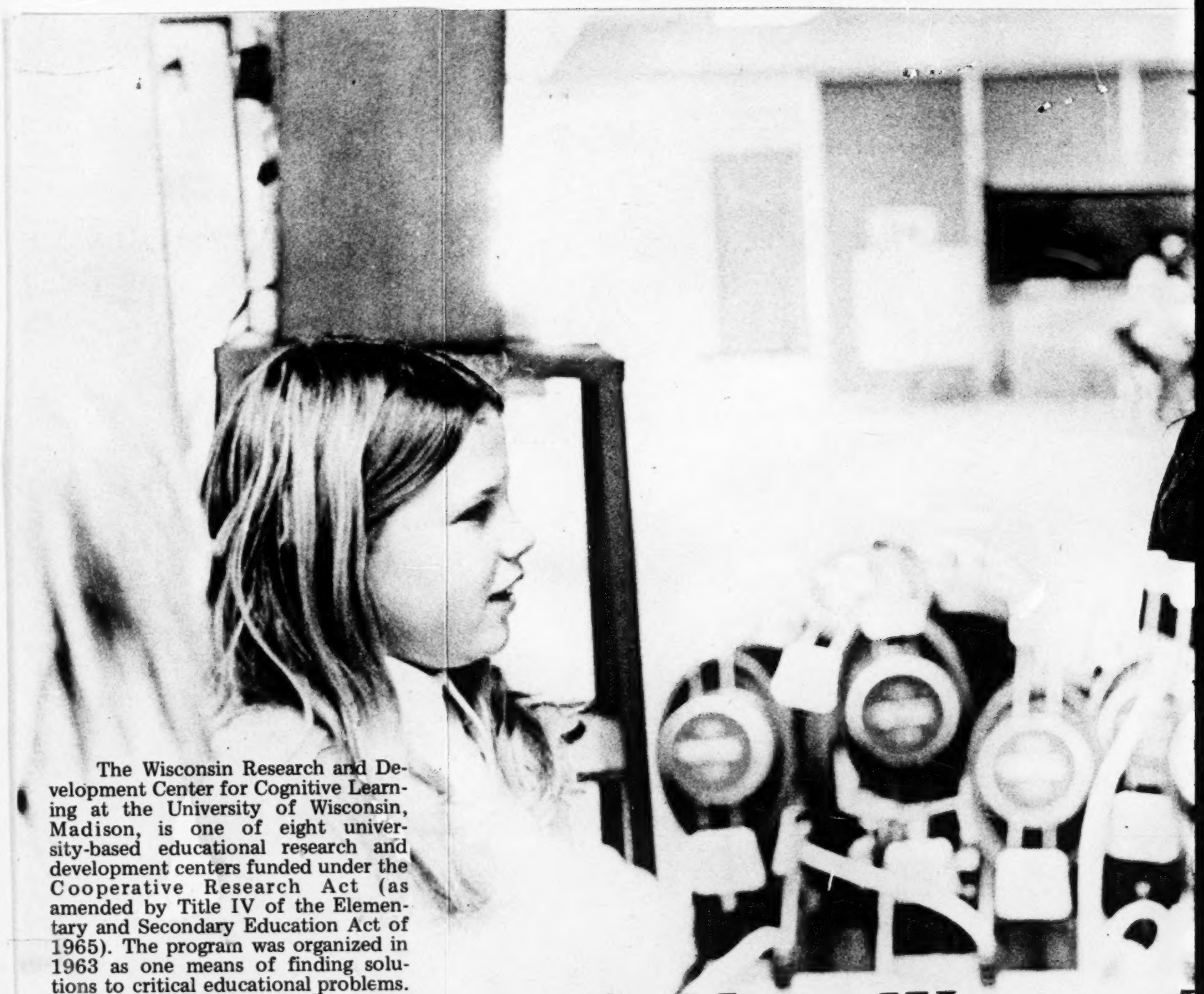

The Wisconsin Research and Development Center for Cognitive Learning at the University of Wisconsin, Madison, is one of eight university-based educational research and development centers funded under the Cooperative Research Act (as amended by Title IV of the Elementary and Secondary Education Act of 1965). The program was organized in 1963 as one means of finding solutions to critical educational problems. The Wisconsin R&D Center was established shortly thereafter under the direction of Herbert J. Klausmeier. Dr. Klausmeier is the originator of the system of Individually Guided Education described in this brochure.

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A New Way to

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A New Way to Teach

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Nearly 70,000 children, 2700 teachers and 250 administrators are involved in implementing a new system of elementary education in 170 of the nation's schools. Developed by the Wisconsin Research and Development Center for Cognitive Learning, this new way of teaching and learning involves changes in school organization as well as in curriculum and instruction.

Evaluation has shown that under this new system:

Children's achievement is higher. For example, in reading higher achievements equivalent to one to four months were observed on standardized reading tests at all primary school levels.

Positive attitudes of children are reflected in consistently higher attendance and reduced vandalism.

More time is spent with students individually and in small groups.

Teachers show significantly higher job satisfaction and morale.

Teacher aides handle clerical tasks allowing teachers more time for teaching and planning.

Principals have more time to act as instructional leaders and consultants.

Principals' ideas are more likely to be understood and carried out.

The components of this new system are outlined in the following pages. If you want to learn more about these educational innovations, we invite you to attend a one-day information conference in April. Please indicate your interest on the reply card attached to the last page of this brochure.

A New Way to Learn

IGE:

Each child is unique. No two children think or learn in exactly the same way, yet many schools still instruct children in an age-graded classroom group as if they were at much the same level of intellectual development. To combat this discrepancy between theory and practice, the Wisconsin R & D Center has developed a new system, Individually Guided Education (IGE), together with a supportive organization, the Multiunit Elementary School (MES).

Under the IGE design, planned variations are made in what each child learns, in how he goes about learning, and in the rate at which he learns. An important premise is that, in addition to teaching basic skills, education must encourage children to develop the learning-to-learn skills and attitudes that will enable them to solve new problems as they arise. IGE goals are realized through a new design for curriculum and instruction, organization, motivation, and other elements of an instructional system.

The IGE program is well along in formulation, due in great part to the contributions and support of teachers, principals, superintendents and others. Center researchers have found widespread support among elementary school practitioners for constructive educational reform. The multiunit organizational pattern has been undergoing development and evaluation in school settings since 1965-66. In addition, the Center is developing and testing IGE curriculum and motivational components in cooperation with thousands of teachers and children throughout the country.

meeting each child's needs

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MES: an organization for learning

The key word in defining a Multiunit Elementary School (MES) is flexibility — in teaching, learning, and decision-making — to meet the unique needs of each child.

The MES is organized to support IGE. Nongraded instructional units replace age-graded classes. An instructional improvement committee in each building and a system-wide policy committee provide the administrative arrangements that are essential for communication and decision-making. Differentiated staffing, group planning and decision-making, open communication, and accountability characterize a multiunit school.

An MES substitutes three to six instruction and research (I & R) units per building for ten to thirty self-contained classrooms. A unit leader, or lead teacher, three staff teachers (including a first-year resident), an intern, an instructional aide, and a clerical aide provide the instruction in a unit of about 150 children. The children of each unit have a four to five year age span in contrast to traditional grades in which children generally represent a two year age span.

Unit teachers plan, carry out, and evaluate an instructional program for each child. By working in teams they are able to pool their knowledge and expertise. The unit leader does not supervise but plans and coordinates unit activities in addition to being a teaching member of the unit. Unit leaders are responsible for demonstrating new materials and procedures and for keeping abreast of research and development.

The principal and his unit leaders comprise the instructional improvement committee which develops and coordinates school-wide objectives and policies. As instructional leader, the principal is primarily responsible for initiating and refining the IGE system, managing the preservice and inservice teacher education activities, and administering the research and development program.

A system-wide policy committee, including the superintendent, principals, some unit leaders and teachers, and relevant central office staff, in turn coordinates activities within a school district.

Such organizational structures with overlapping memberships are designed to encourage decision-making at the appropriate level of the school system and open communication. Accountability at the various levels is also possible.

School staff have responded enthusiastically to the multiunit approach. The number of multiunit schools has grown from seven to 170 in four years. More than 95 percent of the units established under the program are functioning today.

Instructional Programming: guiding each child's activities

Within each I & R unit, children participate in a variety of activities according to their levels of achievement, learning styles, levels of maturation, and other characteristics. Tests and observation schedules, directly related to instructional objectives, help teachers assess the child's needs and then plan his instructional program. Typically, each child is involved each day in one-to-one relations with a teacher or aide, independent study, and small-group, class-size and large-group activities. The proportional amount of each activity is based on each particular child's characteristics, the objectives to be attained, the nature of available instructional materials, and the cost of instruction.

The multiunit structure permits this flexibility in instruction. A staff of four teachers, an intern, and one or two paraprofessionals working in several rooms permit much greater variability in programming than one teacher with 25 children in one room. Such flexibility is essential in providing a teacher-guided instructional program for each child.

Assessment: following each child's progress

The "research" in the I & R title reflects the fact that staff must continuously plan and evaluate each child's instructional program. Evaluation includes preassessment by criterion-referenced tests, work samples, and observation by teachers and aides. A child's level of motivation and his learning style are identified primarily through observation; skill development in curriculum areas is often measured by pre- and post-tests. Computers are being used to gather, store and process information to help teachers design and evaluate a child's instructional program. Continuous assessment allows children to be grouped and regrouped as they master skills. The flexibility provided by short-term grouping is essential to IGE: no child is "tracked," "ability grouped," or promoted on social bases.

Curriculum Materials: filling requirements for IGE

IGE requires that high-quality, tested curriculum materials be available to schools. The Center is currently developing and testing materials in several curriculum areas.

The Wisconsin Design for Reading Skill Development is an individually guided reading program organized into six skill areas: word attack, study skills, comprehension, self-directed reading, interpretive skills, and creative skills. During 1970-71 the word attack program is being field tested in schools involving 18,500 children and 625 teachers in 5 states. Preliminary evaluation during 1968-70 showed a reduction in pupil skill deficiencies and an increase in their level of reading achievement. In addition to the Design, two workbooks to teach children methods for generating original ideas and solution to problems are being evaluated in 11 schools during 1970-71. The workbooks offer exercises for sharpening communication skills and are relevant for use in a language arts program.

Developing Mathematical Processes is an individually guided math program for elementary school children that will consist of 21 curriculum packages. Each package will contain a teacher's manual, materials for children, and criterion-referenced assessment exercises. Three packages of arithmetic materials are under evaluation; seven more are being developed. Nine geometry units and two in probability and statistics will complete the program.

Man and His Environment, instructional materials in environmental education, is being developed. Each set of materials will include a supplemental ecological reader, audiovisual materials to present concepts to poor or non-readers, activities booklets, assessment exercises, and materials for teachers. Project staff are specifying content for the first readers.

Individually Guided Motivation is a program to translate research about motivation into procedures that teachers can use. Four sets of printed and audiovisual inservice materials are in varying stages of development and evaluation. They deal with goal-setting to promote subject matter learning, using older children as tutors for younger children, goal-setting to promote prosocial behavior, and individual conferences to promote independent reading. Initial evaluation shows that these procedures are effective, particularly with low-achieving children.

Taking IGE Nationwide

IGE is a comprehensive systems approach developed as an alternative to piecemeal improvement approaches involving single components such as instructional materials, teaching methods, assessment tools, staff development, and accountability.

The implications for everyone involved in the educational process are great. Teachers, principals, and central office staff all have increased responsibility for educational improvement and decision-making. With added professional responsibility comes high job satisfaction and morale.

The implications for the individual child are both immediate and far-reaching. IGE can mean the difference between stagnation and intellectual growth for a child; the difference between frustration and development of individual potential. IGE, with its overall goal of not only allowing but encouraging individual differences is, finally, a humanizing educational design.

The IGE-MES concept is thriving. Nationally there are nearly 170 multiunit schools in operation in 1970-71, compared to only seven in 1967. In Wisconsin, installation of multiunit schools accelerated in 1968-69 when the Wisconsin Department of Public Instruction took initiative for statewide demonstration, installation and maintenance of multiunit schools. As a result, by 1970-71 about 10 percent of Wisconsin elementary schools have become multiunit.

/I/D/E/A/ (Institute for Development of Educational Activities), an affiliate of the Kettering Foundation, is developing various components of IGE and has also developed a multimedia package of staff development materials. /I/D/E/A/ is working with a number of state education departments, teacher education institutions, and school district offices who plan to implement the IGE-multiunit program in local schools in 1971-72. Further information about the /I/D/E/A/ implementation plan will be made available at the April conferences.

"After careful consideration of various programs being offered throughout the nation today, we have selected the multiunit school, developed by the Research and Development Center for Cognitive Learning, University of Wisconsin, as having the greatest promise as a facilitative environment for improving learning opportunities at the elementary school level. This design meets all the criteria considered necessary if desired improvement is to be achieved. Within the unit structure provided, both the instructional and learning components support effective use of time, talent, and effort. Roles are differentiated and opportunities are provided for planning, sharing, and evaluation. Provision is inherent in the design to encourage cooperative effort in teacher education and research activities at the local educational level."

William C. Kahl

Wisconsin State Superintendent

of Public Instruction

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GPO 821–639

2 Please return by March 5, 1971

☐ I want more information about IGE.

I may want to attend a conference in the following area:

☐ Central East Coast ☐ Southern ☐ Midwest

☐ Rocky Mountain ☐ West Coast

There is no registration fee but participants will pay their own travel and other expenses.

Name _____
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Title _____

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The Wisconsin R & D Center is currently involved in a dissemination effort to carry information about IGE-MES nationwide. One-day conferences to provide more information about IGE will be held in mid-April, 1971. Printed and audiovisual materials developed by the Center will be available for purchase or rental to permit individuals attending these conferences to inform their staff of the IGE design during the 1971-72 school year. Please indicate your interest on the attached reply card.